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GB 1146329 A GB 0857468 A GB 0539258 A
US 4189056 A US 4147286 A US 4082214 A

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(54) Abstract Title
Packaging

(57) Packaging (1) for delivery of products, such as food to an outlet has a collapsible, re-useable, preferably skeletal frame (2) which receives an insert (4) made of a disposable material, such as corrugated cardboard, for supporting the product. The frame (2) may be of plastics material, or corrugated cardboard preferably with a waterproof coating, and the frame (2) preferably has lines of weakness in its end walls to facilitate collapsing.

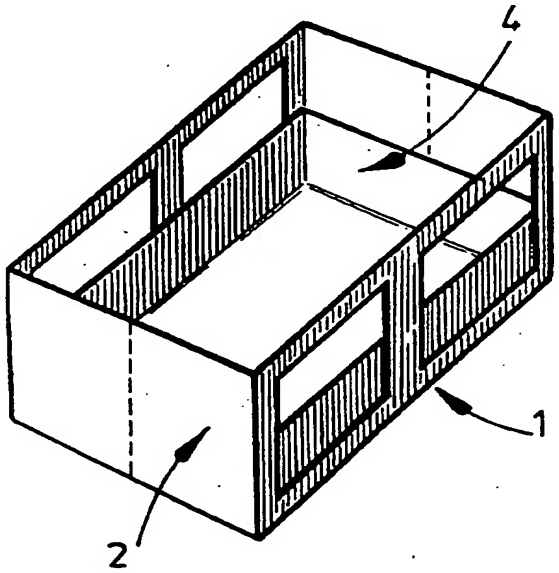

FIG.1

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

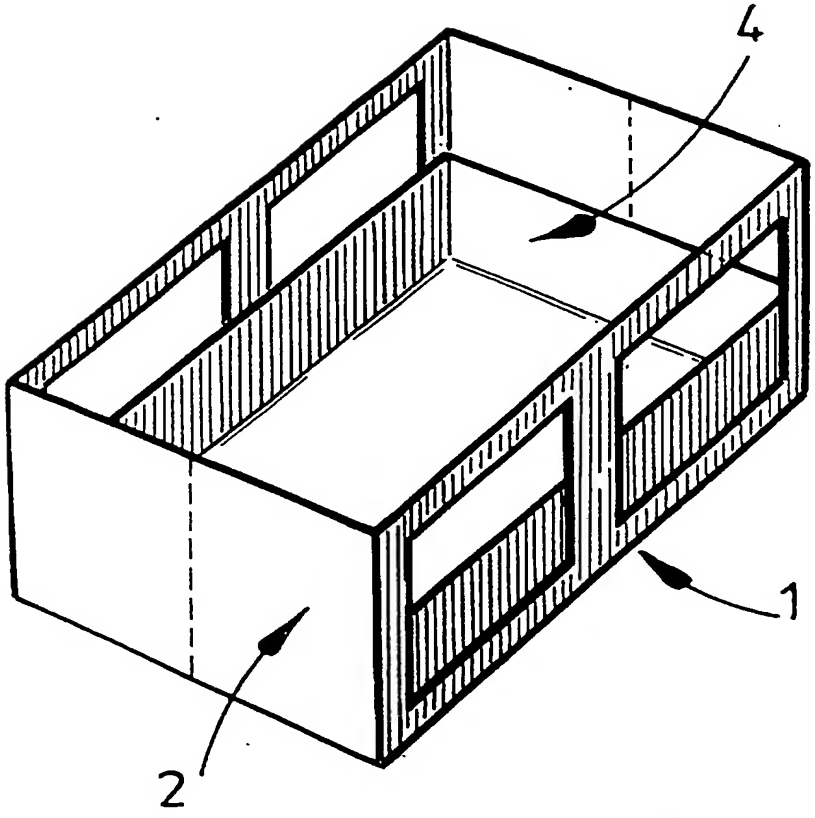

FIG. 1

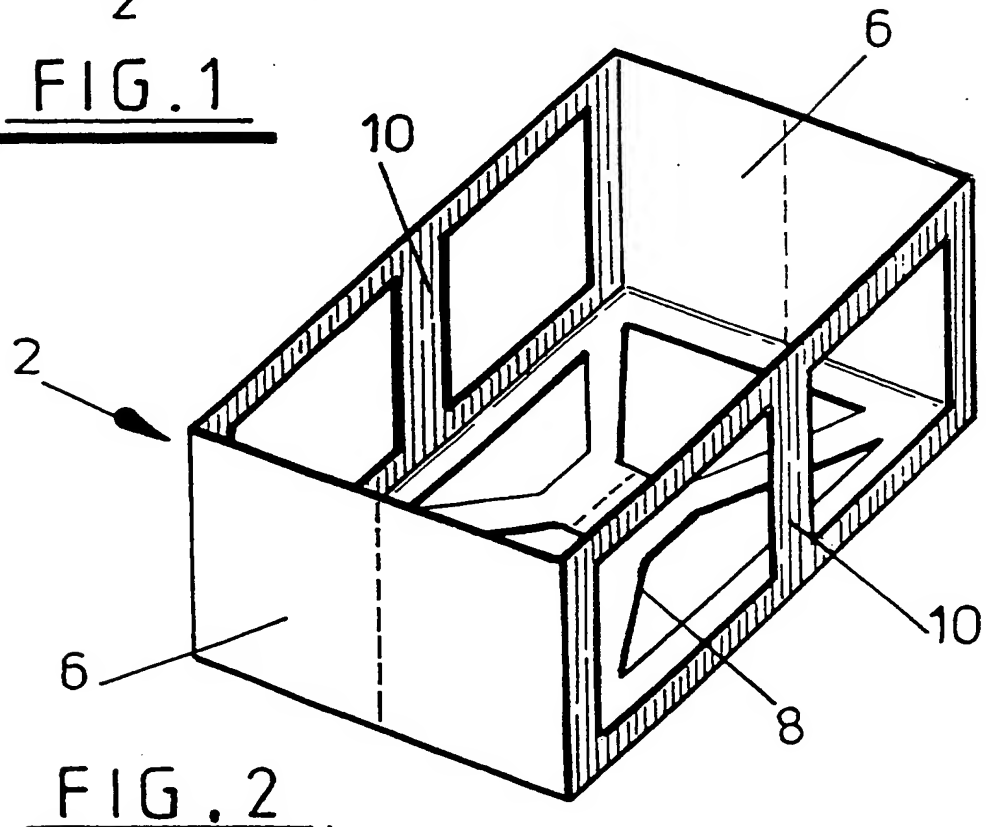

FIG. 2

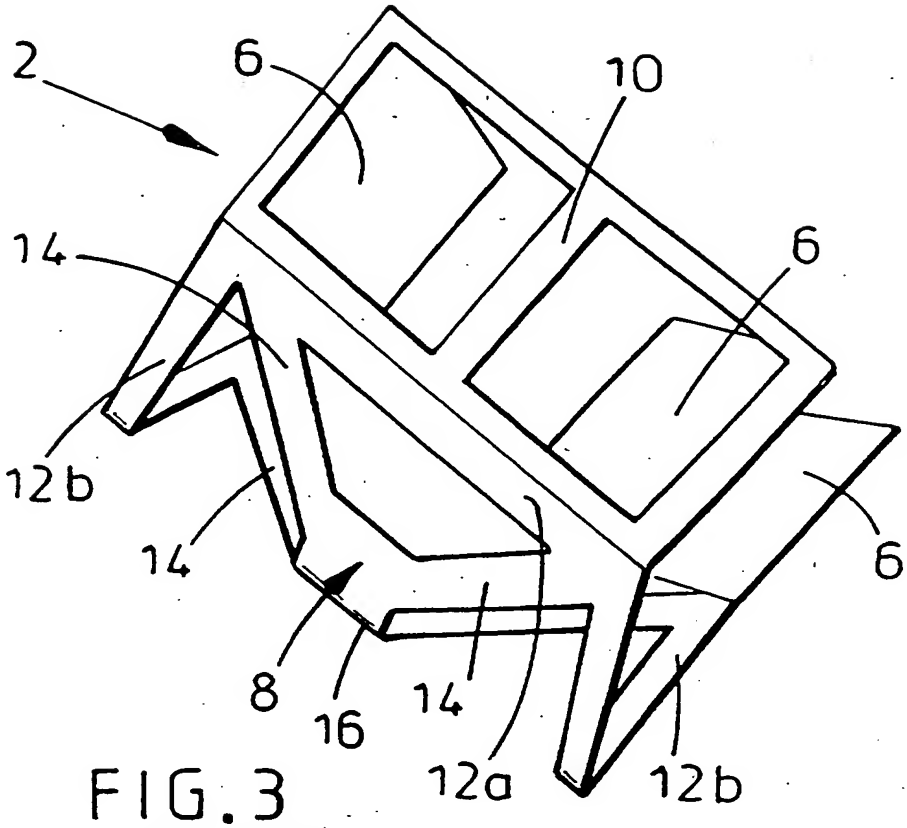

FIG. 3

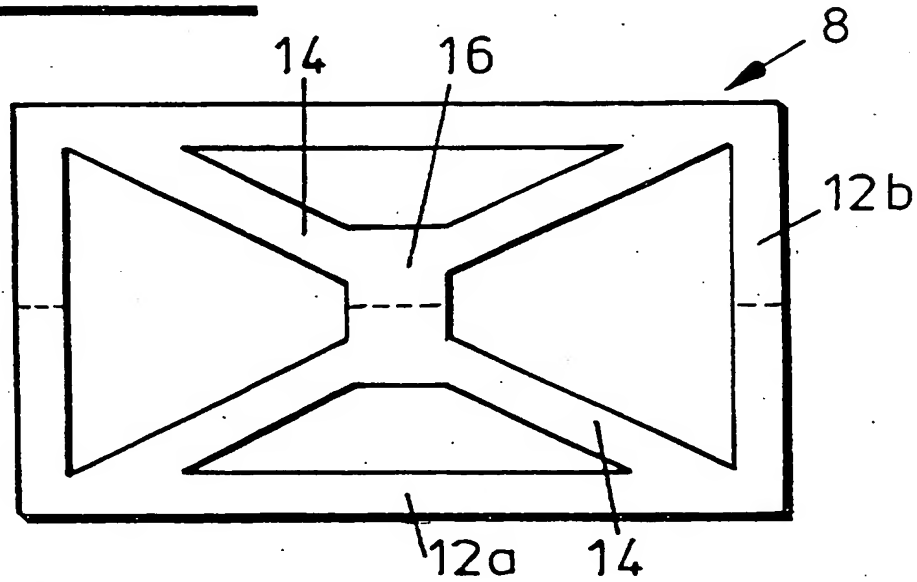

FIG. 4

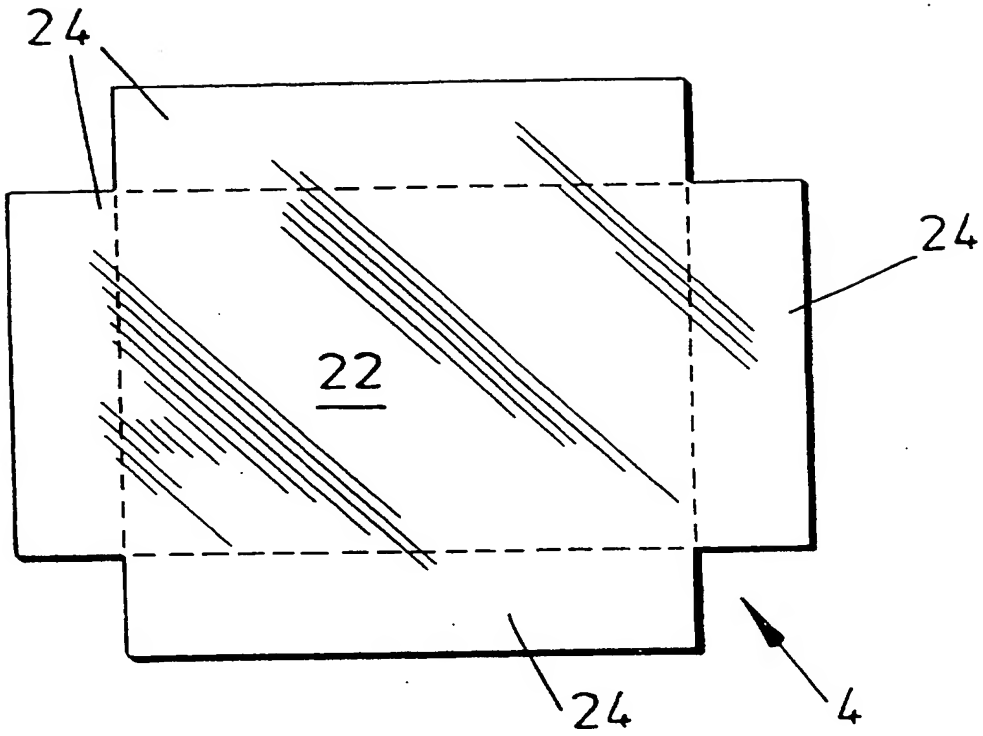

FIG. 5

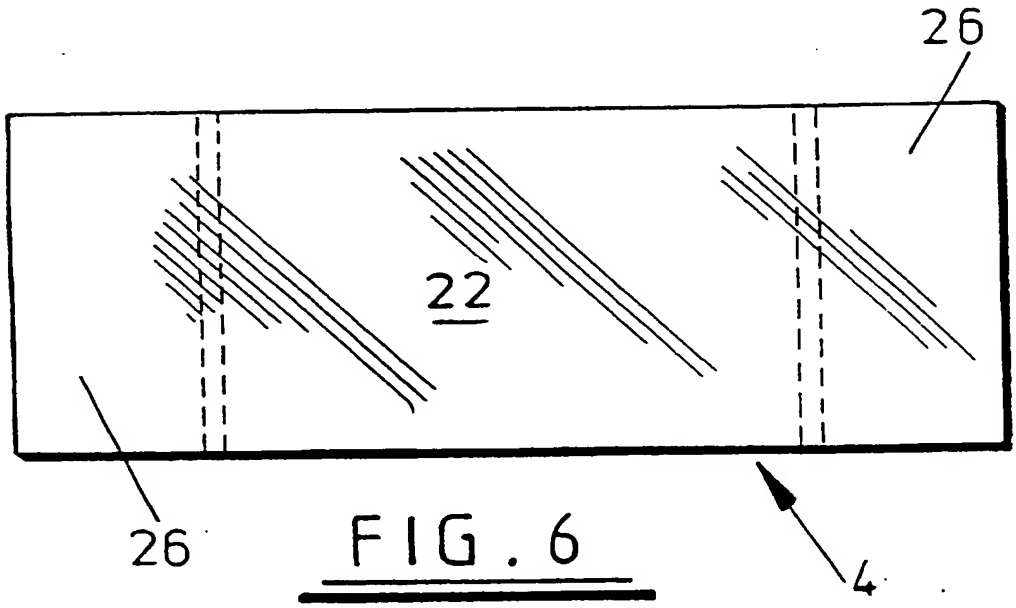

FIG. 6

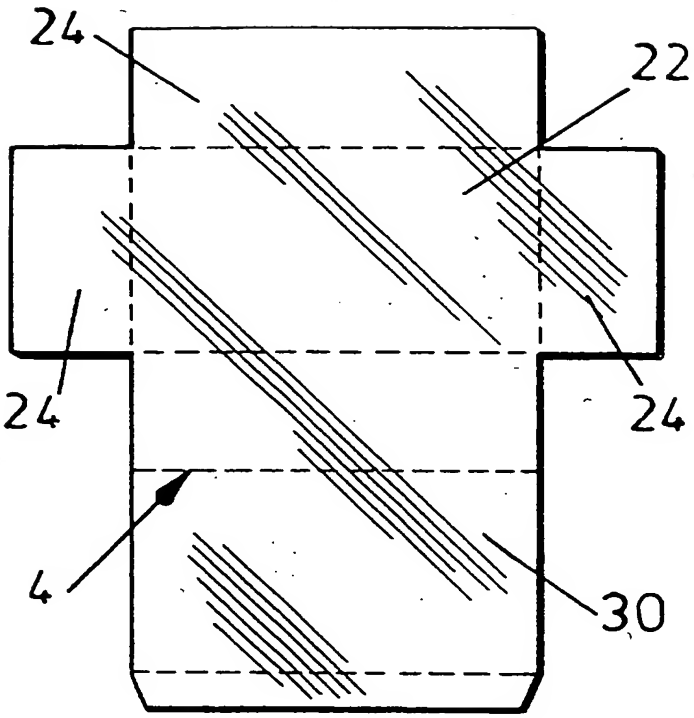

FIG. 7

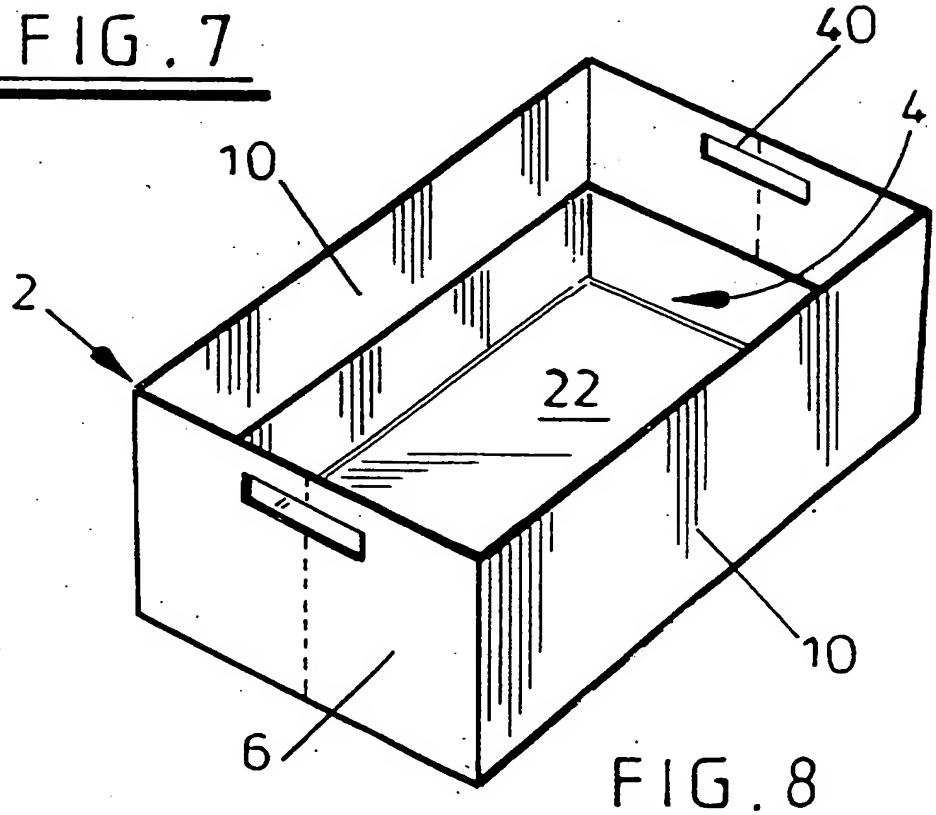

FIG. 8

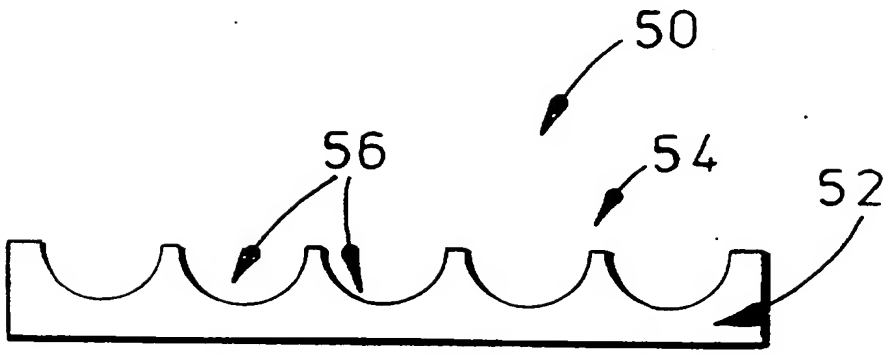

FIG. 9

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Title: Improvements in and relating to packaging

DESCRIPTION

The present invention relates to improvements in packaging, particularly packaging for the bulk delivery of products from a source to an outlet, such as from a manufacturer to a retailer.

Corrugated cardboard packaging has been widely used for many years for the storage and transportation of products in bulk. Large corrugated cardboard boxes are produced as flat packs and assembled prior to use for filling with a particular type of product. The packaged product is then delivered to a given end user and discarded after a single use. The cardboard may be recycled by the user but is not re-usable.

Recently this type of packaging has become less popular due to the large amount of waste cardboard that is produced which is considered to be environmentally unfriendly and has to be disposed of by the end user. Accordingly, the packaging industry has introduced returnable containers for use in the bulk delivery of products.

The main type of returnable container which has been developed and used in the marketplace to date is in the form of a re-usable plastics container. This consists of a large plastics container which may be provided with a lid and/or handles and which has tapered sides to allow stacking of the empty containers after use and during their return journey back to the source. This type of packaging is seen by the user to be an improvement over the disposable corrugated cardboard packaging since the containers may be repeatedly used. However, the use of such packaging for the bulk

delivery of products does have a number of drawbacks.

Firstly, the plastics containers are bulky and therefore occupy a greater volume of space, with additional features such as lids and handles adding to the volume occupied. This results in a reduced amount of product being transported per delivery which is clearly economically undesirable. The additional exterior features of the container also have a high risk of damage thereby further increasing the cost of the packaging. The plastics containers are heavier than the corrugated cardboard packaging and this again may reduce the amount of product which can be delivered in a single delivery due to the maximum loads allowed for freights. The use of returnable containers also adds to the cost of distribution of the products since return shipping of the empty containers is required which was not previously necessary. The empty containers are not collapsible resulting in a large volume of the return load being occupied by air which is extremely wasteful of resources. Additional storage space, up to ten times that previously required, is also necessary for storing the containers at both ends of their journey.

The purchase of a large number of containers also requires a large initial outlay and the actual number of containers acquired is important to ensure that there are always containers available when required, especially given that at any one time a proportion of the containers will be in transit or be held at the product destination. Problems may be encountered if containers are lost and/or not promptly returned, for example due to the containers being used for alternative purposes by the end user. The containers are also unable to easily accommodate a change in product shape and/or size which may increase the amount of space wasted but the introduction of a

more suitable container for the altered product is expensive. Additionally, the containers may become dirty during use and therefore require frequent cleaning which again adds to the total cost of the packaging.

A further disadvantage of the returnable plastics container is that such containers are not suitable for graphics and therefore branding of the product packaged therein. As a result the containers tend towards a generic marketing of a given product rather than by brand name. In today's commercial environment where brand awareness is critical to a product's success, it is important that packaging of the product draws attention to the particular brand of the product.

It is an aim of the present invention to provide an improved type of packaging which overcomes the above-mentioned drawbacks.

Accordingly, the present invention provides an improved type of packaging comprising a collapsible frame for receiving at least one insert, the frame and insert in combination forming a container for supporting a product.

Preferably, the frame is made of a durable non-disposable plastics material and the insert is preferably made of a corrugated cardboard which may be disposed of after use. Alternatively, the frame may also be made of corrugated cardboard, preferably being a heavy grade corrugated board. It is preferable that the corrugated board has a waterproof coating, such as wax.

The construction of the frame preferably enables the frame to be assembled into a rectangular box from a collapsed state and vice versa, the box having two end walls, two side walls and a base. Preferably, the two ends walls are each provided with a line of weakness running longitudinally down the centre thereof, for example

in the form of a living hinge wherein the plastics material is substantially reduced in thickness.

Each of the side walls may be a continuous sheet of material or may be relieved in one or more areas. Such relieving may be advantageous in reducing the weight of the frame, reducing the amount of material used in producing the frame and/or enabling the contents of the container to be visible.

The base of the frame may also be a continuous sheet of material but is preferably relieved in one or more areas. Preferably, a line of weakness is provided through the longitudinal axis of the base. The base is preferably only joined to the walls of the frame along two opposite sides, having two sides detached therefrom, preferably being the sides which run adjacent the base of the end walls of the frame.

Preferably, the base of the frame comprises two parallel strips of material which are joined to the base of the side walls of the frame and which are linked by two parallel strips running adjacent the base of the end walls of the frame but which are not attached thereto. Preferably, two diagonal strips of material are provided across the base of the frame, running from each corner thereof. It is preferable to provide a central block of material in the base of the frame where the diagonal strips meet to assist in supporting the insert. Alternatively, parallel strips may be provided across and/or along the base of the frame for supporting the insert.

It is to be appreciated that the construction of the frame may differ to that hereinbefore described but preferably, the frame is constructed so as to be collapsible using the minimum amount of plastics material necessary to provide adequate support for the insert. The frame may also be provided with a lid. The end and/or side walls

may be provided with handles, for example, by the provision of a bore or recess therein. The surface of the frame may also be provided with graphics printed thereon, for example, in the form of brand names and/or bar-coding.

The insert for placing within the frame may be made in a number of different forms. Preferably, the insert is in the form of a shallow tray. Preferably, the tray is assembled from a blank having a central base forming section with each side of the base section having a flap extending therefrom. Fold lines are preferably provided between the base and each flap to allow the blank to be folded to form the tray. Alternatively, only two opposite sides of the base of the insert may be provided with flaps. The blank for forming the insert may also be provided with a lid forming section.

Alternatively, the insert may be in the form of a preformed moulded container. For example, the intended upper surface of the base of the insert may be shaped to provide individual compartments for holding a particular type of product, such as cup-shaped for receiving individual pieces of fruit or the like. A number of such inserts may be stacked on top of one another within a single frame.

The insert may be provided with a waterproof coating, such as wax, on one or both sides and may have graphics printed thereon.

For a better understanding of the present invention and to show more clearly how it may be carried into effect, reference will now be made by way of example only, to the accompanying drawings in which:-

Figure 1 is a perspective view of a fully assembled container according to one embodiment of the present invention;

Figure 2 is a perspective view of a frame for the container shown in Figure 1, in the assembled state;

Figure 3 is a perspective view of the frame shown in Figure 2 in the collapsed state;

Figure 4 is a plan view of the base of the frame shown in Figures 2 and 3;

Figure 5 is plan view of an insert for the container shown in Figure 1;

Figure 6 is a plan view of an insert for a container according to another embodiment of the present invention;

Figure 7 is a plan view of an insert for a container according to yet a further embodiment of the present invention;

Figure 8 is a perspective view of a fully assembled container according to a different embodiment of the present invention; and

Figure 9 is a cross-sectional longitudinal view of a different type of insert for a container of the present invention.

Referring to Figures 1 to 5 of the accompanying drawings, a container 1 according to one embodiment of the present invention is illustrated for packaging products, such as food, clothing or houseware products, for delivery to an outlet, such as a supermarket. The container has a open rectangular skeletal frame 2 of a plastics material which receives an insert 4, in the form of a shallow tray of corrugated cardboard. The frame 2 is constructed in such a manner that it may be assembled into a rectangular box from a collapsed state and vice versa (see Figures 2 and 3) thereby enabling the frame to be flat packed after delivery of the product for its return journey.

The frame has two end walls 6, each having a line of weakness running longitudinally down the centre thereof (represented by broken lines in the accompanying drawings) and two side walls 10 comprising two parallel strips of plastics material running between each of the end walls 6 and having a central longitudinal strip of material therebetween. The lines of weakness may be in the form of a living hinge. The base 8 of the frame 2 has two parallel strips of plastics material 12a which are joined to the base of the sides 10 of the frame and are linked by two parallel strips 12b running adjacent the base of the end walls 6 of the frame respectively but which are not attached thereto. Additionally, diagonal strips 14 are provided across the centre of the base from each corner thereof, crossing over at a central block of material 16. A line of weakness is provided through the central longitudinal axis of the base.

The skeletal frame 2 may be collapsed by folding the end walls 6 inwardly along the respective lines of weakness to cause the bringing together of the side walls 10. This results in the base 8 of the frame being pushed outwards to cause folding along the fold line provided in the base. This allows the frame to be returned in a collapsed state after use thereby reducing the volume occupied by the container on its return journey. The skeletal frame is also lighter and less bulky than the solid frame of the conventional plastics container and is free from external protuberances. However, it is to be appreciated that the sides and base of the frame may each be made of a continuous sheet of material or may be relieved in other areas than shown in the drawings.

The insert 4 which is dimensioned to fit snugly within the outer skeletal frame

2 to enable products to be placed therein may be in any one of a number of forms. The insert may be in the form of a shallow tray (see Figure 1 and 5) which is produced of corrugated cardboard in flat packed form having a base 22 with each side of the base being provided with a flap 24 extending therefrom. Fold lines are provided between the base and each flap to enable the flaps to be pushed upwardly to form the tray for placing in the frame, the base of the tray being supported by the base 8 of the frame.

Alternatively, the insert may comprise a rectangular base 22 provided with flaps 26 at each end thereof, again being provided with fold lines therebetween, as shown in Figure 6. This type of insert is preferably provided for placement in a frame having side walls 10 which are solid (for example, see the frame shown in Figure 8).

It is to be appreciated that the frame and the insert may be made in any suitable shape and size. Both the frame and insert may be made of a corrugated cardboard material, if desired. If the frame is made of cardboard this should be a heavy grade cardboard such that the frame will be sufficiently strong to allow repeated use thereof, whilst the insert may be made of a thinner cardboard to be disposed of after use.

The insert may additionally be provided with a lid forming section 30 for closing the container, as shown in Figure 7 of the accompanying drawings. Alternatively, the frame may be provided with a lid forming section. The insert and/or frame may also have a waterproof coating, such as wax, depending upon the product to be stored therein. The frame 2 may be provided with additional features,

such as handles 40 (see Figure 8) to allow easier movement of the container. The sides 10 of the frame 2 may also be solid to allow graphics to be printed thereon, such as brand names and/or bar codes for tracking of the frame. Alternatively, graphics may be provided on the side flaps of the insert and be visible through cut-outs provided in the sides of the frame.

The packaging of the present invention provides a semi-returnable container which uses a reduced amount of corrugated cardboard thereby producing less waste cardboard for disposal by the end user. The combination of using both a collapsible re-useable frame with a disposable insert provides packaging which has the combined benefits of the conventional corrugated cardboard packaging and the returnable plastics container whilst overcoming some of the drawbacks experienced therewith.

The insert can be replaced once it is damaged and/or soiled thereby removing the need for frequent cleaning of the container. The production of the frame requires less material and thus the weight and cost of the packaging is reduced. The collapsible nature of the frame removes the need for the side walls of the container to be tapered thereby enabling maximum usage of the space available for transporting the containers. Furthermore, the construction of the packaging of the present invention is such that the container is less suitable for alternative purposes, such as storage boxes, and therefore the containers are more likely to be returned for further use.

Referring to Figure 9 of the accompanying drawings, a further embodiment of an insert for the container of the present invention is illustrated. The insert 50, being of a reinforced paper material, is moulded to form a tray 52 having an upper surface

54 provided with cup-shaped compartments 56. This produces packaging which has individual compartments for receiving a particular type of product, such as individual pieces of fruit. It is to be appreciated that the insert may be moulded in any shape depending upon the product to be carried therein. A number of such inserts may be provided to be stacked on top of each other within a single frame. In this manner, movement of the product within the packaging is reduced thereby minimizing damage to the product.

CLAIMS

1. An improved type of packaging comprising a collapsible frame for receiving at least one insert, the frame and insert in combination forming a container for supporting a product.

2. The packaging of claim 1, wherein the frame is made of a durable non-disposable plastics material.

3. The packaging of claim 1, wherein the frame is made of a corrugated cardboard.

4. The packaging of claim 3, wherein the corrugated cardboard has a waterproof coating.

5. The packaging of any one of claims 1 to 4, wherein the insert is made of corrugated cardboard.

6. The packaging of any one of claims 1 to 5, wherein the construction of the frame enables its assembly into a rectangular box having two end walls, two side walls and a base.

7. The packaging of claims 6, wherein the two end walls each have a line of weakness running longitudinally down the centre thereof.

8. The packaging of claim 7, wherein the line of weakness is in the form of a living hinge.

9. The packaging of claim 6, 7 or 8, wherein the side walls are made of a continuous sheet of material or are relieved in one or more areas.

10. The packaging of any one of claims 6 to 9, wherein the base of the frame is a continuous sheet of material or is relieved in one or more areas.

11. The packaging of any one of claims 6 to 10, wherein a line of weakness is provided through the longitudinal axis of the base.

12. The packaging of any one of claims 6 to 11, wherein the base is joined to the walls of the frame along two opposite sides only, having two sides detached therefrom.

13. The packaging of claim 12, wherein the two sides which run adjacent to the base of the end walls of the frame are detached therefrom.

14. The packaging of claim 13, wherein the base comprises two parallel strips of material which are joined to the base of the side walls of the frame and which are linked by two parallel strips running adjacent to the base of the end walls of the frame which are not attached thereto.

15. The packaging of claim 14, wherein diagonal strips are provided across the base of the frame, running from each corner thereof.

16. The packaging of claim 15, wherein a central block of material is provided in the base of the frame at the junction of the diagonal strips.

17. The packaging of claim 14, wherein parallel strips are provided across or along the base of the frame.

18. The packaging of any one of preceding claims further comprising a lid for the frame.

19. The packaging of any one of the preceding claims wherein the frame and/or insert are provided with one or more handles.

20. The packaging of any one of the preceding claims, wherein the insert is in the form of a shallow tray.

21. The packaging of claim 20, wherein the insert is assembled from a blank comprising a central base forming section, two or more sides of the base section having a flap extending therefrom, the base section being separated from each flap by fold lines.

22. The packaging of claim 21, wherein the blank is provided with a lid forming section.

23. The packaging of any one of claims 1 to 19, wherein the insert is in the form of a preformed moulded container.

24. The packaging of claim 23, wherein the intended upper surface of the base of the insert is shaped to provide individual compartments for holding a particular type of product.

25. The packaging of any one of the preceding claims, wherein the insert is provided with a waterproof coating.

26. An improved type of packaging substantially as hereinbefore described and with reference to Figures 1 to 5, 6, 7, 8 and 9 of the accompanying drawings.

The Patent Office

INVESTOR IN PEOPLE

Application No: GB 9826711.5
Claims searched: 1 to 26

Examiner: Mike Henderson
Date of search: 17 February 1999

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): B8P (PA PE1X PE2J PK2 PK8 PK12)

Int Cl (Ed.6): B65D 5/36 5/50 25/16 25/18 88/52

Other: ONLINE:EPODOC

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 1146329	(LEVY) (Whole disclosure relevant)	1,2 & 19
X	GB 857468	(UNIVERSAL CASE CO LTD) (Whole disclosure relevant)	1,3 to 6,9, 10 & 18
X	GB 539258	(THE THOMPSON & NORRIS MANUFACTURING CO et al) (P.2 lines 58-67 and Fig.1 particularly relevant)	1,3 to 6,9, 10 & 18
X	US 4189056	(MAJEWSKI) (Whole disclosure relevant)	1,2,5 & 20
X	US 4147286	(BATES et al) (Whole disclosure relevant)	1,2,5,6, 9,10 & 19
X	US 4082214	(BAKER) (Whole disclosure relevant)	1 to 6,9, 10,20 & 21

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.